

ABSTRACT OF THE DISCLOSURE

A robot apparatus is to be mounted on a robot hub, and includes a main robot link, a first robot extension arm, a second robot extension arm, a first robot blade, a second robot blade. A hub motor, a first extension motor, and a second extension motor. The main robot link is fixedly mounted to the robot hub. The first robot extension arm is rotatably mounted to a first end of the main robot link. The second robot extension arm is rotatably mounted to a second end of the main robot link. The first end of the main robot link is located on a distal end of the main robot link from the second end of the main robot link. The first robot blade is mounted to the first robot extension arm. The second robot blade is mounted to the second robot extension arm. The hub motor provides controllable rotational motion of the main robot link about the robot hub. The first extension motor is configured to provide controllable simultaneous extension or retraction of the first robot extension arm and the first robot blade. The second extension motor is configured to provide controllable simultaneous extension or retraction of the second robot extension arm and the second robot blade.

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